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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09.642.785	08.22.2000	Woo Nam Jeong	2658-0166p	2432

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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/642,785

Applicant(s)

JEONG ET AL.

Examiner

HOAN C. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 16-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-15 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1-2, 4-12 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Choi (US6326641B1).

In regard to claim 1, Choi discloses as prior arts (Figs. 1) a liquid crystal display device comprising:

- a gate line 2/3 connected to an integrally formed gate electrode 4;
- a data line 16/18 crossing the gate line and connected to an integrally formed source electrode 6;
- a protective film 26 formed on the gate line and on the data line;

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- a pixel electrode 12 formed on the protective film and connected to a drain electrode, a first portion of the pixel electrode overlapping the data line and being laterally spaced a first distance from the gate line;
- a storage electrode connected to the pixel electrode and overlapping the gate line.

wherein

- a portion of the storage electrode is laterally spaced a second distance from the data line according to claim 2.
- the first portion of the pixel electrode and the portion of the storage electrode are located in at least one corner of the pixel electrode according to claim 4.
- a second portion of the pixel electrode overlaps a data line adjacent to the data line overlapped by the first portion of the pixel electrode according to claim 5.
- the first and second portions of the pixel electrode extends along an entire side of the pixel electrode according claims 6 and 7.
- the pixel electrode includes: a gate overlapping part overlapping a gate line on a side of the pixel electrode opposite from the storage electrode according to claim 10.
- the pixel electrode includes four sides and four corners, the four corners being laterally spaced from the data and gate lines, and two of the four sides laterally overlapping adjacent data lines; and at least one of the four sides laterally overlaps a gate line according to claims 11 and 12.

In regard to claims 8 and 9, Choi discloses as prior arts (Figs. 1-2) a liquid crystal display device comprising the storage electrode is integral to the pixel electrode 20 at a contact hole (as Fig. 2 shown, storage electrode includes 2 layers, which are lower layer 22 and upper layer integrating with pixel electrode at the contact hole, please see attachment).

In regard to claim 15, Choi discloses as prior arts (Figs. 1) a liquid crystal display device comprising:

- a gate line 16 connected to an integrally formed gate electrode 4;
- a data line 3 crossing the gate line, and connected to an integrally formed source electrode 6;
- a protective film 26 formed on the gate line and on the data line;
- a pixel electrode 12/20 formed on the protective film and connected to a drain electrode, a portion of the pixel electrode overlapping the data line;
- a storage electrode connected to the pixel electrode and overlapping the gate line, a portion of the storage electrode being laterally spaced a distance from the data line.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

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be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi (US6326641B1).

Choi fails to disclose the protection layer is an organic film made of Benzocyclobutene (BCB) having a dielectric constant of 1.5-3.0. However, This material BCB is conventional materials using to make protection or passivation layer. This BCB having a dielectric constant of 2.7-3.0 is well known physical property of BCB.

#### ***Allowable Subject Matter***

Claim 3 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not anticipate obvious to one ordinary skill in the art of a liquid crystal display device further comprising (see attachment)

- the pixel electrode overlapping with data line and being laterally spaced a first distance of about 5 $\mu$ m from gate line;
- a storage electrode connected to the pixel electrode and overlapping the gate line, wherein a portion of the storage electrode is laterally spaced a second distance of about 5 $\mu$ m from the data line.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Gu et al. (US6320226B1) discloses prior art a LCD with increased pixel opening sizes, wherein the distance or gap between pixel electrodes and the bus lines is about 5-10 $\mu$ m (col. 2 lines 8-16). Gu et al. also teach (Fig. 3) a LCD with the pixel electrode overlapping the bus lines from 2-3 $\mu$ m (col. 9 line 2-4).

Ohi (US5699185) discloses a matrix array of active matrix LCD with gate overlapping part overlapping a gate line on same side with TFT, wherein the portion of the storage electrode is spaced a distance of L4 from data line as Figure 25 shown. However, Ohi fails to disclose the dimension of L4.

Shin et al. (US5737049) disclose liquid crystal display device having storage capacitors of increased capacitance with storage electrode spaced from data lines.

Deane (US5929489A) disclose (Figs. 2, 3 and 6) a display matrix structure with a parasitic transistor having a storage electrode Cs that is spaced a distance of L from data line 11b. Deane does not disclose a dimension of the distance L and pixel electrode overlapping the data lines.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SIKES L WILLIAM can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8178 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN  
Examiner  
Art Unit 2871

chn  
August 22, 2002

TOANTON  
PRIMARY EXAMINER